IN THE

Supreme Court of the United States

OCTOBER TERM, 1977

No. 77-74

DANIEL B. COFER
GEORGE C. WARD
DALE D. PROCTOR,

Petitioners,

—V.—

C. MARSHALL DANN,
Commissioner, Patents and Trademarks

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

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PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Petitioners, Daniel B. Cofer, George C. Ward and Dale D. Proctor, respectfully pray that a Writ of Certiorari issue to review the judgment of the United States Court of Customs and Patent Appeals in this case.

OPINIONS BELOW

The opinion of the Court of Customs and Patent Appeals is reprinted in the Appendix hereto (hereinafter "APP.") at App. A, p. 1a, and the opinion of the

Patent and Trademark Office Board of Appeals is reprinted at App. B, p. 6a. Neither opinion is reported.

JURISDICTION

The decision of the Court of Customs and Patent Appeals issued on April 14, 1977 and was certified to the Commissioner of Patents and Trademarks on May 6, 1977. The jurisdiction of this Court is invoked under 28 U.S.C. 1256.

QUESTIONS PRESENTED

1. Whether 35 U.S.C. 144 permits the United States Court of Customs and Patent Appeals to base its decision on independent findings of fact, made by the Court sua sponte, ostensibly drawn from evidence of record before the Patent and Trademark Office but neither found nor relied upon by the Patent and Trademark Office in reaching its decision from which the appeal is taken.

2. Whether such findings of fact, if in fact permissible under 35 U.S.C. 144, are warranted in view of the evidence of record in this case.

INTRODUCTORY STATEMENT

Ths issues in this case involve the scope of Judicial Review afforded by 35 U.S.C. 144 and the authority vested by Congress in the Court of Customs and Patent Appeals pursuant to said statute governing appeals from the Patent and Trademark Office. By granting certiorari this Court will be able to assert its

supervisory authority over the Court of Customs and Patent Appeals, which authority it has over Federal Appellate Courts in general, and to reestablish and clarify the statutory scheme promulgated by Congress, pursuant to 35 U.S.C. §§144 and 145, as it did in Hoover v. Coe, 325 U.S. 79 (1945), infra, regarding antecedent statutes R.S. 4911 and R.S. 4915 in effect prior to the Patent Act of 1952. These issues are of the utmost importance to the approximately one hundred thousand applicants for patents per year who look primarily to the Court of Customs and Patent Appeals for review of their patent applications, if rejected by the Patent and Trademark Office, as well as to the fair and effective administration of the patent laws.

STATUTORY PROVISION INVOLVED

This case involves Section 144 of the Patent Act of 1952, 35 U.S.C. 144, which provides as follows:

> The United States Court of Customs and Patent Appeals, on petition, shall hear and determine such appeal on the evidence produced before the Patent Office, and the decision shall be confined to the points set forth in the reasons of appeal. Upon its determination the court shall return to the Commissioner a certificate of its proceedings and decision, which shall be entered of record in the Patent Office and govern the further proceedings in the case.

STATEMENT OF THE CASE

Petitioners applied (R.5)[1] for a patent on an "Apparatus For Producing A Hot-formed Product." The invention relates to apparatus for producing a hot-formed product, particularly a copper or copper based product, from a cast metal bar without the necessity of homogenizing the cast bar between the casting means and the hot-forming means as was required in the prior art.

By virtue of the present invention, the petitioners quite literally established the commercial and technical feasibility of continuously casting and rolling copper rod, primarily for use as electrical conductor wire. Prior to this breakthrough, copper rod was conventionally produced in the prior art by non-continuous systems. At the present time approximately fifty percent of the world-wide production of copper rod for the electrical industry is produced by systems incorporating the present invention.

Prior to the present invention, petitioners were familiar with the apparatus disclosed in U.S. Patent No.

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[1] " R." refers to the printed record filed in the Court of Customs and Patent Appeals.

2,710,433[2] issued to Illario Properzi (hereinafter "Properzi"), and had successfully used it to produce hot-formed aluminum-based products at Southwire Company, Carrollton, Georgia, the assignee of this invention.

In August 1962 engineering personnel from Southwire and Western Electric Company embarked upon a "joint development effort" the purpose of which was to adapt apparatus similar to that disclosed in the Properzi patent to the production of a commercially acceptable copper-based product. Petitioners were aware that Illario Properzi himself had failed to produce a commercially acceptable copper-based product using the Properzi apparatus, and despite efforts by the "joint development effort" to modify the design of the Properzi apparatus, the project ended in apparent failure in August 1963. Petitioners, however, thereafter recognized that the splitting and cracking of the copper rod as produced by the Properzi apparatus resulted from the failure of the Properzi apparatus to eliminate large columnar dendrites in the rolled copper product,

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[2] Patent No. 2,710,433 discloses apparatus for the continuous production of aluminum rod from molten aluminum. The apparatus includes essentially two main elements: (1) continuous casting means, and (2) a rolling mill (hot-forming means) adapted to continuously receive the castbar from the casting means and roll the same into continuous rod. Because of the relative softness of aluminum as compared with copper, it is much easier to roll aluminum without the problem of splitting and cracking that occurs with copper rod.

and thus modified the Properzi apparatus by providing "means for substantially completely destroying the columnar dendritic structure in the cast bar of copper" prior to entry of the bar into the Properzi mill.

In support of the patentability of their invention, the petitioners submitted to the Patent Office the affidavits of Daniel B. Cofer, including attached Exhibits B, C and D, (R. 36-64) and E. Henry Chia (R. 104-108). These affidavits, in part, established the fact that the Properzi apparatus could not substantially completely destroy the dendritic structure in the cast copper bar until after at least four or five roll passes. Exhibit B of the Cofer affidavit (R. 50) contains photomicrographs depicting columnar dendritic grain structure existing in the copper bar after four roll passes in the Properzi apparatus.

In petitioner's main claim 10[3/] (R. 139) there is recited, inter alia:

> "means . . . for initially substantially reducing the cross-sectional area of the cast bar of copper . . .,
>
> said means for reducing also comprising means to substantially completely destroy the columnar dendritic structure in the cast bar of copper. . .."

[3/] Eight claims were presented on appeal, numbered 10-17, respectively.

In petitioners' dependent claim 16, the invention is further defined by reciting that "said means for reducing includes less than four roll stands."

By including this recitation in dependent claim 16, petitioners were attempting to further distinguish the Properzi apparatus wherein large columnar dendrites were shown to exist even after the bar passes through four roll stands.

The Patent Examiner rejected all of petitioners' claims as unpatentable under 35 U.S.C. 103 as obvious over Properzi in view of the patents to Very, Baker and Edwards, and petitioners appealed to the Patent and Trademark Office Board of Appeals ("Board"). The Board, in adopting the decision of the Board of Appeals, in petitioners' earlier parent application[4/], held:

> "Since the Properzi device as modified in the manner taught by Very and Baker would be essentially the same as that claimed by appellants . . . it will inherently function to destroy the dendritic structure of the metal being worked in the same manner as appellants' claimed device." (App. B, p. 10a)

[4/] The instant application was filed under 35 U.S.C 120 as a Continuation of parent application Serial No. 816,127, filed April 14, 1969. The latter application was also appealed to the Board which affirmed the examiner's rejection in a Decision not of record below.

The Board neither contradicted nor questioned petitioners' affidavit evidence, but rather avoided any questions arising thereunder by simply holding that it would have been obvious, within the meaning of 35 U.S.C. 103, to modify the Properzi apparatus to include therein the claimed "means for substantially completely destroying the dendritic structure."

The Court of Customs and Patent Appeals affirmed, holding that the invention, as defined in the claims presented, "would have been obvious to one of ordinary skill in the art, within the purview of 35 U.S.C. 103, from the entirety of the evidence considered by the board." (App. A, infra, p. 1a). However, while ostensibly affirming the decision of the Board, the Court below in fact based its decision, at least as to claim 16, on two new and independent findings of fact; to wit:

1. That petitioners' Cofer affidavit Exhibit B indicates that substantially complete destruction of the dendritic structure has been effected after the third roll pass in the Properzi apparatus (id. at 3a); and

2. That "the unmodified Properzi apparatus would have been capable, depending on the nature of [certain variations in the actual percent reduction in cross-sectional area occurring during operation of the Properzi apparatus], of effecting 'substantially complete' dendrite destruction in three roll passes." (Emphasis added). (id. at 3a).

Thus, while the essence of the Board's decision is that the Properzi apparatus, as modified by the teachings of the secondary references, would have inherently destroyed the dendritic structure in the cast bar, the gravamen of the decision of the Court below is that the unmodified Properzi apparatus would have been capable of effecting this result.[5/] In effect, therefore, the Court below raises a new issue, not tried before the Patent and Trademark Office, and made certain findings of fact drawn from the evidence of record in order to support its conclusion that the Patent and Trademark Office was correct in rejecting the claims under 35 U.S.C. 103, albeit for different reasons.

REASONS FOR GRANTING THE WRIT

1. Title 35, United States Code, Section 144 provides that the Court of Customs and Patent Appeals may review the Patent and Trademark Office decision "on the evidence produced before the Patent Office, and the decision shall be confined to the points set forth in the reasons of appeal." The Court of Customs and Patent Appeals itself has stated on many occasions that its authority is limited to determining whether the Patent and Trademark Office rejection is right

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5/ It is noteworthy that nowhere in the opinion of the court below is there any comment on the Board's holding that it would be obvious to modify Properzi in view of the Very and Baker patents.

or wrong.[6] The Court of Customs and Patent Appeals does not decide the ultimate question of patentability of the invention in its broader context, but rather only whether the specific rejection made by the Board of Appeals, as to the specific claims on appeal on the record before the Court, is right or wrong.[7]

Undoubtedly the Court of Customs and Patent Appeals is cognizant of the limitations imposed by 35 U.S.C. 144 to the effect that its determination of the appeal must be made exclusively on the record before it.[8] However, the court is apparently of the further opinion that it may draw its own inferences from that record, and make findings of fact sua sponte, in order to support its conclusion that the ultimate legal conclusion reached by the Board was correct, despite the fact that the Board's conclusion was based on other factual grounds.

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[6] In re Wheeling, 413 F.2d 1187 (CCPA 1969); Appl. of Johnson, 359 F.2d 905, 906 (CCPA 1966); In re Citron, 326 F.2d 418 (CCPA 1964); In re Kalter, 316 F.2d. 747 (CCPA 1963); and Glass v. De Roo, 239 F.2d 402 (CCPA 1956).

[7] Id.

[8] In re Houghton, 433 F.2d 820 (CCPA 1970); Appl. of Cofer, 354 F.2d. 664, 668 (CCPA 1966); and Appl of Fleissner, 264 F.2d 897 (CCPA 1959).

The authority granted the Court below under 35 U.S.C. 144 is to be contrasted with the authority vested in the United States District Court for the District of Columbia under 35 U.S.C. 145. Under the latter statute Congress provided that "an applicant dissatisfied with the decision of the Board of Appeals may . . . have remedy by civil action against the Commissioner in the United States District Court for the District of Columbia. . . .," and that the District Court "may adjudge that such applicant is entitled to receive a patent for his invention, as specified in any of his claims involved in the decision of the Board of Appeals, as the facts in the case may appear. . . . .." (Emphasis added).

Thus, as stated by this Court in Hoover v. Coe, 325 U.S. 79 (1945):

> "It is evident that alternative rights of review are accorded an applicant, - one by appeal to the United States Court of Customs and Patent Appeals, the other by bill in equity filed in one of the federal district courts. In the first the hearing is summary and solely on the record made in the Patent Office; in the other a formal trial is afforded on proof which may include evidence not presented in the Patent Office. Every party adversely affected by a ruling on the merits may, if he so elect, proceed by bill rather than by appeal. In the one case the adjudication in equity authorizes issue of a patent on the applicant's 'otherwise complying with the requirements of law.'

> In the other the decision 'shall govern the further proceedings in the case' in the Patent Office." Hoover v. Coe, supra, at 83.

In view of the foregoing, as well as in view of the clear Congressional intent expressed in 35 U.S.C. §§ 145 and 145, and the historial context in which said statutes evolved (See Hoover v. Coe, supra, at 84-87), it is apparent that the District Court, pursuant to Section 145, may make findings of fact and conclusions of law based on the evidence presented before it, including the record before the Patent and Trademark Office, while the Court of Customs and Patent Appeals is limited to a summary review "on the evidence produced before the Patent Office," having recourse to the "clearly erroneous" rule applicable to appellate courts in general as to questions of fact, but may not make its own independent findings of fact.

In the instant case the Patent and Trademark Office Board held that it would have been obvious under 35 U.S.C. 103 to modify the Properzi apparatus to effect "substantially complete destruction" in view of the fact that rolling "destroys dendrites" (e.g., the U.S. Steel publication). However, the Court below did not affirm this finding, but rather held that the unmodified Properzi apparatus per se will substantially completely destroy the dendritic structure after three roll passes in the Properzi apparatus. This factual issue was neither tried before the Patent and Trademark Office nor presented to the Court below for consideration as part of the "Notice And Reasons

Of Appeal."[9/] In effect, therefore, the Court of Customs and Patent Appeals was making a new rejection to which the petitioners were given the opportunity to neither respond nor rebut.

If the decision below is allowed to stand it will have far reaching implications in the administration of the Patent Laws. If 35 U.S.C. 144 permits the Court of Customs and Patent Appeals to make its own independent findings of fact, directed to issues not tried before the Patent and Trademark Office, then applicants before the Patent and Trademark Office will be forced not only to rebut the grounds of rejection specifically made by the Patent and Trademark Office against their applications for patents, but will in addition be forced to anticipate any additional grounds that the Court of Customs and Patent Appeals might find, on appeal, which could conceivably be drawn from the record, and to build a record before the Patent and Trademark Office sufficient to rebut such anticipated grounds. Obviously, not only is such a requirement unfair and unduly burdensome, but the cost to applicants would be so great as to have a chilling effect on prospective applicants for patents.

Given the foregoing, applicants dissatisfied with the decision of the

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9/ The Notice and Reasons of Appeal are set out in App. D, p. 19a. It is noted that 35 U.S.C. 144 limits the decision of the Court of Customs and Patent Appeals "to the points set forth in the reasons of appeal."

Board will tend to opt for the suit de novo before the District Court pursuant to 35 U.S.C. 145 where they will at least have the opportunity during the trial to rebut any new grounds of rejection, and to thereafter have recourse as a matter of right to the Court of Appeals to seek review of any findings of fact or conclusions of law that they believe are erroneous or not supported by such evidence. However, not only are such suits more costly and time-consuming than appeals under 35 U.S.C. 144, but a policy encouraging recourse to Section 145 rather than 144 is contrary to Congressional intent, is wasteful of scarce judicial resources and will tend to further clog the already crowded docket of the United States District Court for the District of Columbia.

On the other hand, if the writ is granted this Court will have the opportunity to clarify the statutory scheme governing review of Patent and Trademark Office decisions pursuant to §§ 144 and 145, and to provide guidance to the Patent and Trademark Office and applicants for patents as to the required scope of the recored before the Patent and Trademark Office, and to assure such applicants as to at least the procedural certainties in appeals from the Patent and Trademark Office decision, be it before the Court of Customs and Patent Appeals or the United States District Court.

2. Even if the Court below was correct in assuming that it has the power to make independent findings of fact based on the record before the Patent and

Trademark Office, despite the fact that such findings were neither made nor relied upon by the Patent and Trademark Office Board, in the instant case such findings are not supported by the evidence and are thus clearly erroneous.

The affidavits and Exhibits[10/] presented by petitioners are clearly to the effect that large columnar dendrites still exist in rod produced by the Properzi apparatus after four roll passes. This evidence was neither rebutted nor challenged by the Patent and Trademark Office. Instead, the Patent and Trademark Office implicitly accepted this evidence by holding that the claimed invention would be unpatentable in any event since it would be obvious under 35 U.S.C. 103 to modify Properzi in view of the Very and Baker patents and that the so-modified apparatus would be capable of effecting substantially complete destruction of the dendritic structure in the cast copper bar.

There was no evidence of record from which it could be found that: (1) the dendritic structure is "substantially completely destroyed" after three roll passes in Properzi; or (2) that the unmodified Properzi apparatus would have been capable of effecting substantially complete dendritic structure in three roll passes. The reference by the Court below to Exhibit B[11/] of the Cofer affidavit

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[10/] Cofer and Chia affidavits (R. 36 and 104).

[11/] A photomicrograph depicting the grain strucutre of copper rod after passing through successive stages of reduction in the Properzi rolling mill.

(R. 50; App. A, infra, p. 3a) as support for such findings was improper and unwarranted. Not only was such evidence submitted by petitioners for precisely the opposite proposition, and supported by expert affidavit testimony, but there is not a scintilla of evidence in the record from which it could be concluded that the Court's reading of Exhibit B is possible, let alone reasonable.

In effect, therefore, the Court below was setting itself up as an expert in metallurgy, substituting its own expertise for that of the Patent and Trademark Office and making a finding of fact, drawn from its own interpretation of the metallurgical grain structure depicted in Exhibit B, without the benefit of expert testimony in support of such interpretation. Although certain documents are capable of speaking for themselves, and a court is thus entitled to draw any reasonable inferences therefrom, the exhibit in question herein is not such a document. A photomicrograph of the type herein depicting metallurgical grain structure is not susceptible to interpretation by an appellate court, or any court for that matter, in the absence of expert testimony, and a finding that said photomicrograph does not depict "substantially complete destruction" of the dendritic structure of the metal is clearly erroneous in the absence of specific expert testimony to that effect, particularly when the only expert testimony of record is to the contrary and uncontradicted by the tribunal charged with resolving the facts in the case.

Accordingly, the Court of Customs and Patent Appeals erred in affirming the decision of the Board, not on the grounds advance by the Board, but rather on new grounds based on a factual determination rendered sua sponte by the Court below. It is respectfully submitted that not only were the findings of fact relied upon by the Court below clearly erroneous, but the determination thereof itself exceeded the scope of the Court's authority under 35 U.S.C. 144.

CONCLUSION

For the foregoing reasons, the Petition for a Writ of Certiorari should be granted.

Respectfully submitted,

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APPENDIX

A. Opinion of the Court of Customs and Patent Appeals

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

IN THE MATTER OF THE APPLICATION OF DANIEL B. COFER, GEORGE C. WARD, and DALE D. PROCTOR	)	Patent Appeal No. 76-664. Serial No. 323,471.

Decided: April 14, 1977

RICH, Judge.

DECISION

The decision of the Patent and Trademark Office Board of Appeals (board) is affirmed.

OPINION

We agree with the board's decision that appellants' apparatus, as defined in claims 10-17, would have been obvious to one of ordinary skill in the art, within the purview of U.S.C. 103, from the

entirety of the evidence considered by the board.[1]

Independent claims 10 and 17 define a copper-forming apparatus similar to that of Properzi. These claims require means for "substantially reducing the cross-sectional area" of the cast copper bar which also function to substantially completely destroy the columnar dendritic structure in the cast bar. The reducing means is further defined as including "at least one roll stand" (emphasis ours) having an elliptical rolling channel.

Appellants admit in the Cofer and Chia affidavits, respectively, that the Properzi apparatus has, in fact, been used to form a copper product, albeit of poor quality, and that the Properzi apparatus as is will eliminate columnar dendrites after four or five roll passes. The "Wire" article indicates, and appellants concede, that a conventional Properzi apparatus with a 17 roll stand mill operating on cast copper effects a 46.6% reduction in area after three roll passes and a 58.6% reduction after four roll passes. Recognizing that the first three or four roll stands function to "initially" eliminate columnar dendrites, and that the remaining 13 or 14 roll stands function to further hot-form the cast copper bar, it appears that the Properzi apparatus varies from that instantly claimed only in the shape of one of the first four rolling channels.

[1] We view the relevant evidence as including not only the Properzi, Baker, Very, and Edwards references relied upon by the examiner, but also the U.S. Steel reference, cited by the board without mention of 37 CFR 1.196(b) but argued by both parties before us, the various admissions in the specification and affidavits of record, and the "Wire" article (Exhibit C) forming part of the Cofer affidavit.

Edwards teaches that elliptical rolling channels are conventionally employed in rolling mills to impart an elliptical cross section to the work piece. We are persuaded that one of ordinary skill in the art would have found it obvious to employ one or more elliptical rolling channels at the front of the Properzi rolling mill, if, for any reason, an elliptical cross section was desired.

We are aware that dependent claim 16 further limits the reducing means to "less than four roll stands." Judging from the grain structures illustrated in Cofer affidavit Exhibit B, we cannot say that "substantially complete destruction" of columnar dendrites has not been effected after the third roll pass. Further, appellants concede that the 20% theoretical reduction per roll pass in the Properzi mill actually varies from about 12 to about 25%. In our opinion, the unmodified Properzi apparatus would have been capable, depending on the nature of these variations, of effecting "substantially complete" dendrite destruction in three roll passes. Accordingly, we hold that the apparatus defined by claim 16 would also have been obvious to one of ordinary skill in the art.

Turning to appellants' arguments and rebuttal evidence, the Cofer and Chia affidavits clearly show that the serial compressions effected in the initial stages of the Properzi rolling mill, although ultimately effective in refining the bar's grain structure, are not effective in eliminating the cracking problem which appears to have plagued those who used the Properzi apparatus to form copper products. Based on the teachings of U.S. Steel, the board correctly concluded that columnar dendrites in an "as cast" copper bar would have been recognized by one of ordinary skill in the art as deleteriously affecting its physical properties and, further, that one so skilled would have known that such dendrites could be eliminated by hot-rolling. We find no evidence of record, however, which would have suggested that initial hot-working in the form of a severe single compression in a specially configured rolling channel, as disclosed, avoids the cracking problem, as the affidavits allege. Assuming this allegation to be true, we might conclude that appellants have discovered and eliminated the source of the cracking problem and that their disclosed solution would not have been obvious to one of ordinary skill in the art from the evidence before us. However, none of the appealed claims is limited to the single compression apparatus discussed in the affidavits.

Appellants cannot properly rely on their limited showing to overcome the §103 rejection of these broadly drawn claims because the instant specification, in insisting on single compression apparatus, strongly suggests that the patentably

distinguishing beneficial results would not be obtained with serial compression apparatus still within the scope of the claims.[2/] Since appellants' rebuttal evidence is not directed to the broader subject matter claimed, we are constrained to affirm the decision of the board. In re Lindner, 59 CCPA 920, 457 F.2d 506, 173 USPQ 365 (1972); In re Tiffin, 58 CCPA 1277, 443 F.2d 394, 170 USPQ 88, modified, 58 CCPA 1420, 448 F.2d 791, 171 USPQ 294 (1971).

2/ Appellants have described the cracking problem as resulting from the passage of a bar, having poor physical properties due to the presence of columnar dendrites, through a series of roll stands where it is subjected to cracking forces. This problem would, apparently, still exist if the reducing means did not operate to destroy such dendrites in a single compression.

B. Opinion of the Board of Appeals

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte Daniel B. Cofer,
George C. Ward
and
Dale D. Proctor

- - - -

Application for Patent filed Jan. 15, 1973, Serial No. 323,471. Apparatus for Producing a Hot-Formed Product.

Van C. Wilks and Victor M. Wigman for appellants.

Before Mattern and Williamowsky, Examiners-in-Chief, and Arnold, Acting Examiner-in-Chief.

Arnold, Acting Examiner in Chief.

This is an appeal from the examiner's final rejection of claims 10-17, which are the claims still pending in the application.

Claim 10 is representative and reads:

10. Apparatus for hot-forming non-homogenized continuously cast copper comprising

casting means for continuously casting a cast bar of copper that is within the range of copper's hot-forming temperatures and which possesses a columnar dendritic structure,

means remote from said casting means for initially substantially reducing the cross-sectional area of the cast bar of copper while substantially preventing the cracking or splitting of the copper as it is reduced,

said means for reducing also comprising means to substantially completely destroy the columnar dendritic structure in the cast bar of copper,

said means for reducing comprising at least one roll stand having a substantially elliptical rolling channel for restricting lateral movement of the cast bar and for providing a linear velocity gradient thereacross which tend to substantially prevent cracking or splitting of the cast bar during said reduction, and

hot-forming means for subsequently hot-forming the reduced cross-section cast copper bar while it is still within the range of copper's hot-forming temperatures, said cast bar temperature having been established in said casting means.

The references upon which the examiner has relied are:

Baker	395,684	Jan. 8, 1889
Very	494,659	Apr. 4, 1893
Edwards	1,193,001	Aug. 1, 1916
Properzi	2,710,433	June 14,1955

Art made of record by the Board of Appeals:

The Making, Shaping and Treating of Steel (United States Steel) copyright, 1957 (pages 820, 821) (7th edition).

The invention here involved is admittedly an improvement over the disclosure of the Properzi patent which illustrates transforming molten metal into a rod which is then continuously rolled by a hot-forming means (rolling mill) to produce rolled wire. It is appellants' position that when producing aluminum rod with such apparatus, the tendency of the rod to split and crack during rolling is not as great as it is with copper. To eliminate splitting and cracking of the wire when made of copper, the instant invention involves adding a third element to the Properzi apparatus, recited most broadly in the claims as "means for substantially completely destroying the columnar dendritic structure in the cast bar of copper." Structurally, the means for accomplishing this result is a roll

stand having a substantially elliptical rolling channel and capable of substantially reducing the cross-sectional area of the cast bar of copper.

Claims 10-17 stand rejected under 35 USC 103 as unpatentable over Properzi in view of Baker, Very, and Edwards. It is the position of the examiner that the Very patent makes obvious the addition of a preliminary set of rolls to compress or compact a newly cast strand of wire in the Properzi disclosure prior to passing through the plurality of rolling mills there disclosed. The Baker patent illustrates that such rolls could be made adjustable, whereas, the Edwards patent teaches that such rolls could be used to reshape metal from a quadalateral shape to an elliptical shape. The examiner further notes in lines 17-19 of page 2 of the examiner's final rejection of February 12, 1974 that "with any non-planar roll surface points further from the center of rotation will have tangential velocities greater than closer points".

We have carefully reviewed the stated rejection of the claims in light of the references relied upon and the arguments presented by appellants and the examiner in support of their respective positions and have concluded that the examiner's holding of unpatentability does not constitute reversible error.

Before proceeding with a discussion of the issues in the instant case we make reference to a prior appeal, number 079-99 in appellants' parent application, Serial No. 816,127, involving substantially the same subject matter as here

involved. In that appeal the claims under consideration were rejected as unpatentable over Properzi in view of Very and Baker. There a main issue was also whether or not it would be unobvious to add to the Properzi arrangement a "conditioning means" which in combination with a casting means and a hot-forming means would serve to solve the problem of cracking or splitting in the cast metal when it is hot-formed by means such as a rolling mill.

In the previous appeal, it was argued that such addition serves to condition the continuously cast bar by substantially destroying the dendritic structure of the cast bar, which result was urged foreign to the prior art. The Board of Appeals, in that instance, did not agree with appellants. There the Board of Appeals held that it would be obvious to provide the continuous casting machine of Properzi with a compression roller similar to the roll "i" shown in the Very patent to compact or compress the newly cast strand as it leaves the mold. It was further agreed that the Properzi device, modified as taught by Baker could be adjusted to carry out the wide variety of deformations which would have the wide variety of effects on material being worked including those claimed by appellants. Since the Properzi device as modified in the manner taught by Very and Baker would be essentially the same as that claimed by appellants, it was the opinion of the Board of Appeals that it would be reasonable to assume that "it will inherently function to destroy the dendritic structure of the metal being worked in the same manner as appellants' claimed

device". We remain of the opinion this conclusion is correct.

In addition to the foregoing remarks, the Board of Appeals stated in the sentence bridging pages 5 and 6 of their decision that a person skilled in the art would know that hot-rolling metal breaks down the dendritic structure. This remark is, in our opinion, a primary issue around which the question of patentability revolves. We find no challenge in the record of this remark and therefore conclude that it is correct. Moreover, in support thereof, we make reference to page 821 of a book named The Making, Shaping and Treating of Steel, published by United States Steel. A copy of pages 820 and 821 of said book is enclosed herewith. It will be noted on page 821 that paragraph identified as 2, states that:

> "The dendritic structure is broken up during rolling".

Although this reference is made to Steel, it is presumed that it applies generally to rolling of other metals as well.

The thrust of appellants' arguments is that the crux of this invention, upon which unobviousness is based, resides in the provision of "means for substantially completely destroying the columnar dendritic structure" of the rod prior to its being hot rolled. Since deformation and destruction of the dendritic structure of metal results from a rolling operation, and since it is the dendritic structure which creates the cracks and cleavages formed in the finished bar, a prerolling of such bar to

change or break up the dendritic structure would appear to be obvious. The degree of disturbance of the dendritic structure is clearly a function of the pressure applied during the rolling operation.

Although we are not unmindful of the fact recognition of the problem very often is the heart of an invention and can support unobviousness, we do not consider that to be the case here. The presence of a cracking and cleavage in continuously cast copper wire as well as the reasons therefore, would appear to be an obvious defect. The prior art (which includes knowledge of one skilled in the art) suggests how to overcome such defects.

The claims here on appeal distinguish over the claims involved in the prior appeal referred to by calling for "at least one roll stand having a substantially elliptical rolling channel for restricting a lateral movement of the cast bar". We do not consider such structural recitation as a patentable distinction since rollers of such shape are commonly known in the rolling art as exemplified by the Edwards patent.

The argument has been presented that the elliptical shape of the rollers "provide a linear velocity gradient thereacross which tend to substantially prevent cracking or splitting of the cast bar during reduction." The examiner quite properly points out that with any non-planar roll surface, points further from the center of rotation will have tangential velocity greater than closer

points. This is obviously a physical reality. Moreover, in this connection, we direct attention to the last seven lines of page 5 of the prior appeal (supra) which read:

> "It is well settled that a patent cannot be granted for an applicant's discovery of a result, even though it may be unexpectedly good, which flows, as it does in this case, logically from the teachings of the prior art. In re Inman, 43 CCPA 706, 228 F.2d 226, 108 USPQ 138; In re Kelley, re CCPA 816, 230 F.2d 435, 109 USPQ 42; In re Tanczyn, 44 CCPA 764, 766, 241 F.2d 731, 112 USPQ 483."

Appellants state on page 10 of the brief that the Properzi apparatus is intended and adapted only for the production of aluminum products. To support such statement appellants make the allegation on page 3 of his affidavit under the provisions of 37 CFR 132 that attempts were made to produce hot-formed copper-base products with the Properzi structure but that such products were not commercially practical. The failure by appellants to produce commerically practical products with the Properzi structure does not render unobvious success in use of such apparatus by others using full knowledge of what is know in the art.

We have considered the commercial success aspect of appellants' invention but find no nexus between that and the merits of the invention. That appellants are the sole manufacturer of copper wire

in the manner here involved does not in our opinion establish commercial success nor would increased sales alone prove that success is due to the merits of the invention.

We have carefully reviewed the record in this case including arguments not specifically discussed herein but find no adequate reason for reversing the position taken by the examiner. Accordingly, the rejection of claims 10-17 will be sustained.

The decision of the examiner is affirmed.

AFFIRMED

C. Opinion of the Board of Appeals on Reconsideration

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte Daniel B. Cofer,
George C. Ward
and
Dale D. Proctor

- - - -

Application for Patent filed Jan. 15, 1973, Serial No. 323,471. Apparatus for Producing a Hot-Formed Product.

Van C. Wilks for appellants.

Before Mattern and Williamowsky, Examiners-in-Chief, and Arnold, Acting Examiner-in-Chief.

Arnold, Acting Examiner in Chief.

REQUEST FOR RECONSIDERATION

This is a petition for reconsideration of our decision of January 23, 1976, affirming the examiner's rejection of claims 10 through 17. By this petition appellants charge the Board of Appeals with having failed to distinguish the concept of mere "breaking-up" of the dentritic (sic) structure of a continually cast copper wire from the concept of substantially completely destroying the dentritic (sic) structure as recited in the claims.

In support of a statement by the Board of Appeals in its decision that to one skilled in the art, hot rolling of metal breaks down the dentritic (sic) structure, reference was made to pages 820 and 821 of a publication entitled The Making, Shaping and Treating of Steel, where the following fact in reference to Steel is made:

> "The dentritic (sic) structure is broken up during rolling."

To refute the foregoing, an affidavit of Henry Chia has been included with the petition.

In our deliberations, we were not unmindful of the requirement of the claims to:

> "substantially completely destroy the columnar dentritic (sic) structure in the cast bar of copper."

As evidence of this, the statement is made in lines 15-17 of page 5 of our decision that:

> "The degree of disturbance of the dentritic (sic) structure is clearly a function of the pressure applied during the rolling operation."

This statement was intended to suggest that substantially complete destruction of the dentritic (sic) structure would be possible with adequate pressure. This is obvious carrying forward of the above quoted position. Thus, the difference in the expressions in question is a relative one.

We find nothing in the Chia affidavit that is in conflict with the foregoing expressed position. The statement in the affidavit that steel rods are "always heated in a separate operation prior to rolling in the mill does not negate the fact that "the dentritic (sic) structure is broken up during rolling." This fact would appear to suggest that the extent of destruction could be determined empirically.

For the reasons indicated, we do not find reason in the affidavit for reversing our holding.

We remain of the opinion that the invention is made obvious by the evidence of record.

The petition has been carefully considered but is denied as to making

any change in our decision.

DENIED

D. Notice And Reasons Of Appeal

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF APPEALS

In re application of]	Appeal No. 209-00
DANIEL B. COFER ET AL]	Group: 322
Serial No. 323,471]	
	Examiner:
Filed. Jan. 15, 1973]	R. S. Annear
For: APPARATUS FOR PRODUCING A HOT-FORMED PRODUCT]	

NOTICE AND REASONS OF APPEAL
TO THE UNITED STATES COURT
OF CUSTOMS AND PATENT APPEALS

Hon. Commissioner of
Patents and Trademarks
Washington, D.C. 20231

Sir:

Notice is hereby served of appellants' appeal to the Court of Customs and Patent Appeals under 35 U.S.C. 141 and 142 from the decision of the Board of Appeals in Appeal No. 209-00, rendered on January 23, 1976 and the reconsideration of said decision by the Board of Appeals on March 25, 1976. The following are assigned as reasons of appeal:

1. The Board erred in sustaining the Examiner's rejection of claims 10-17 under 35 U.S.C. 103 as unpatentable over the Properzi patent No. 2,710,433 in view of the Baker patent No. 395,684 and the Very patent No. 494,659, and the Edwards patent No. 1,193,001.

2. The Board erred in holding that the Properzi device modified in the manner taught by Very and Baker would inherently function to destroy the dendritic structure of the metal being worked in the same manner as appellants' claimed device.

3. The Board erred in holding that it would be obvious to adjust the rolling pressure of the Properzi apparatus such that the dendritic structure of the metal being rolled would be substantially completely destroyed.

4. The Board erred in failing to give due weight to appellants' recognition of the problem.

5. The Board erred in failing to give due weight to the commerical success of appellants' invention.

6. The Board erred in failing to take into consideration the significant differences in the processing of copper and aluminum.

7. The Board erred in failing to take proper consideration of the Cofer Affidavit under Rule 132 as well as the Affidavit of E. Henry Chia.

8. The Board erred in failing to reverse the Examiner's rejection of claims 10-17.